



**(43) International Publication Date**  
**5 August 2004 (05.08.2004)**

## PCT

**(10) International Publication Number**  
**WO 2004/066136 A3**

(51) International Patent Classification<sup>7</sup>: G06F 3/033,  
G02F 1/133

(21) International Application Number: PCT/TB2003/006339

(22) International Filing Date: 24 December 2003 (24.12.2003)

**(25) Filing Language:** English

**(26) Publication Language:** English

(30) Priority Data:  
03100097.9      20 January 2003 (20.01.2003)      EP

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

**(72) Inventors; and**

**(75) Inventors/Applicants (for US only):** DESTURA, Galileo, J., A. [PH/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). VAN BERKEL, Cees [NL/GB]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). CIRKEL, Peter, A. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

**(74) Agent: RAAP, Adriaan, Y.; Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).**

**(81) Designated States (national):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) **Designated States (regional):** ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

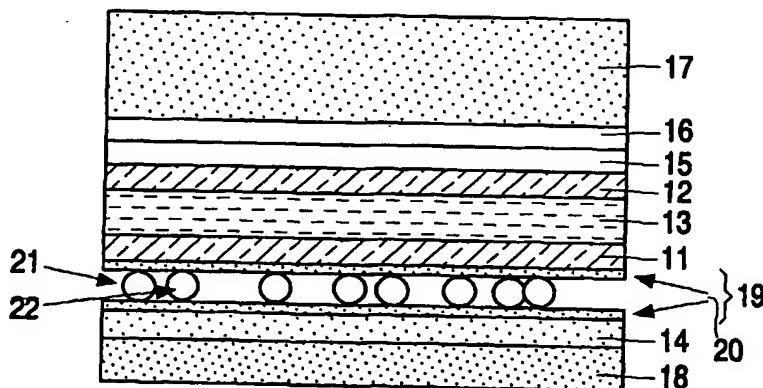
**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) **Date of publication of the international search report:**  
16 December 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(54) Title:** TOUCH SENSITIVE DISPLAY DEVICE



**(57) Abstract:** A touch-sensitive display is made by incorporating a touch sensitive layer (19) between two optical layers (4, 15, 16) or between a substrate (11, 12) and a further optical layer (14, 15, 16).

## INTERNATIONAL SEARCH REPORT

In International Application No.

PCT/IB 03/06339

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F3/033 G02F1/133

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F G02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 814 760 A (JOHNSTON JAMES P ET AL) 21 March 1989 (1989-03-21) column 1, line 38 - column 3, line 12 column 4, line 4 - line 63 figures 1-4	1,5-7
X	EP 0 773 497 A (SYMBIOS LOGIC INC) 14 May 1997 (1997-05-14) column 1, line 56 - column 2, line 13 column 6, line 2 - line 11 column 6, line 57 - column 8, line 32 column 9, line 7 - column 11, line 50 claims 1-3 figures 1,3-5	1-7



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

Date of the actual completion of the international search

2 November 2004

Date of mailing of the international search report

08/11/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Butler, M

## INTERNATIONAL SEARCH REPORT

In Application No  
PCT/IB 03/06339

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 501 529 B1 (KIYOOKA FUMITOSHI ET AL) 31 December 2002 (2002-12-31) column 1, line 60 - column 3, line 45 column 5, line 50 - column 6, line 8 figures 3-5,8,9 -----	1-7
X	US 5 949 501 A (IZUNO AKINOBU ET AL) 7 September 1999 (1999-09-07) column 2, line 9 - line 31 column 6, line 63 - column 7, line 46 column 8, line 41 - line 61 column 9, line 24 - column 10, line 20 figures 1-5 -----	1-7
X	WO 01/02899 A (E INK CORP) 11 January 2001 (2001-01-11) page 3, line 6 - line 17 page 6, line 7 - page 8, line 12 page 10, line 6 - line 19 page 16, line 9 - line 24 figures 1-3 -----	1-7
E	WO 2004/013746 A (JOHNSON MARK T ; RAAP ADRIAAN Y (NL); DE BOER DIRK K G (NL); KONINKL P) 12 February 2004 (2004-02-12) Whole document -----	1-7
A	US 2002/025837 A1 (LEVY DAVID H) 28 February 2002 (2002-02-28) paragraph '0002! paragraph '0004! - paragraph '0006! paragraph '0030! - paragraph '0032! paragraph '0129! paragraph '0135! figure 4 -----	2-4
A	EP 0 817 110 A (NOKIA MOBILE PHONES LTD) 7 January 1998 (1998-01-07) column 1, line 57 - column 2, line 30 column 3, line 38 - column 4, line 25 figures 1,2,5 -----	5-7
A	GB 2 321 707 A (CRANNY ANDREW WILLIAM JAMES ; SION RUSSELL PAUL (GB); ATKINSON JOHN KA) 5 August 1998 (1998-08-05) abstract page 3, line 3 - page 7, line 29 figures 1-6 -----	3

# INTERNATIONAL SEARCH REPORT

Information on patent family members

II Application No

PCT/IB 03/06339

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4814760	A	21-03-1989	AU 582181 B2	16-03-1989
			AU 4645085 A	03-07-1986
			CA 1254685 A1	23-05-1989
			DE 3584242 D1	31-10-1991
			EP 0189590 A2	06-08-1986
			JP 1889137 C	07-12-1994
			JP 6018031 B	09-03-1994
			JP 61157931 A	17-07-1986
EP 0773497	A	14-05-1997	US 5777596 A	07-07-1998
			DE 69614635 D1	27-09-2001
			DE 69614635 T2	07-02-2002
			EP 0773497 A1	14-05-1997
			JP 9274537 A	21-10-1997
US 6501529	B1	31-12-2002	JP 2001075074 A	23-03-2001
US 5949501	A	07-09-1999	JP 9282095 A	31-10-1997
WO 0102899	A	11-01-2001	AU 5779200 A	22-01-2001
			EP 1192504 A2	03-04-2002
			JP 2003504666 T	04-02-2003
			WO 0102899 A2	11-01-2001
			US 6392786 B1	21-05-2002
WO 2004013746	A	12-02-2004	WO 2004013746 A2	12-02-2004
US 2002025837	A1	28-02-2002	AU 6478101 A	17-12-2001
			BR 0111232 A	27-07-2004
			CA 2410454 A1	13-12-2001
			CN 1439164 T	27-08-2003
			EP 1290705 A2	12-03-2003
			JP 2003536307 T	02-12-2003
			WO 0195358 A2	13-12-2001
EP 0817110	A	07-01-1998	FI 962692 A	29-12-1997
			EP 0817110 A2	07-01-1998
			JP 10097382 A	14-04-1998
GB 2321707	A	05-08-1998	NONE	